## 44

**ANALYTICAL REPORT** 

## PREPARED FOR

Attn: Terri Choy AECOM 1001 Bishop Street Honolulu, Hawaii 96813 Generated 3/1/2023 6:07:13 PM

## **JOB DESCRIPTION**

Red Hill - AFFF Assessment Sampling

## **JOB NUMBER**

580-123908-2

Eurofins Seattle 5755 8th Street East Tacoma WA 98424



## **Eurofins Seattle**

### **Job Notes**

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

### **Authorization**

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Authorized for release by Tracy Dutton, Client Relations Manager Tracy.Dutton@et.eurofinsus.com Designee for Marie Walker, Senior Project Manager

M.Elaine.Walker@et.eurofinsus.com (253)248-4972

Client: AECOM

Project/Site: Red Hill - AFFF Assessment Sampling

Laboratory Job ID: 580-123908-2

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#### **Case Narrative**

Client: AECOM Job ID: 580-123908-2

Project/Site: Red Hill - AFFF Assessment Sampling

Job ID: 580-123908-2

**Laboratory: Eurofins Seattle** 

**Narrative** 

#### **CASE NARRATIVE**

Client: AECOM
Project: Red Hill - AFFF Assessment Sampling
Report Number: 580-123908-2

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

Following DoD QSM guidelines, manual integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure, Acceptable Manual Integration Practices, SOP No.: Q-S-002. The reason(s) for manual integration have been documented on the affected chromatogram(s), which is/are provided in the raw data package. The raw data also includes the original chromatogram(s) prior to any manual integration being performed. Manual integrations are detailed in the manual integration summary forms following this narrative.

It should be noted that samples with elevated Limits of Quantitation (LOQs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the LOQs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

#### RECEIPT

The samples were received on 02/22/2023; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.1 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

#### **GLYCOLS**

Samples AF-RHMW04-WGN01LF-2302W3 (580-123908-5) and AF-RHMW06-WGN01LF-2302W3 (580-123908-7) were analyzed for glycols in accordance with EPA SW-846 Method 8015B - DAI. The samples were analyzed on 02/28/2023.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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### **Definitions/Glossary**

Client: AECOM Job ID: 580-123908-2

Project/Site: Red Hill - AFFF Assessment Sampling

#### **Qualifiers**

#### **GC Semi VOA**

 Qualifier
 Qualifier Description

 M
 Manual integrated compound.

 U
 Undetected at the Limit of Detection.

#### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

**Eurofins Seattle** 

3/1/2023

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## **Client Sample Results**

Client: AECOM Job ID: 580-123908-2

Project/Site: Red Hill - AFFF Assessment Sampling

Client Sample ID: AF-RHMW04-WGN01LF-2302W3 Lab Sample ID: 580-123908-5

Date Collected: 02/20/23 10:10 Matrix: Water

Date Received: 02/22/23 10:30

Analyte	Result Qual	ifier LOQ	DL Unit	D	Prepared	Analyzed	Dil Fac	
2-(2-Butoxyethoxy)ethanol	3.0 U.M.	5.0	1.1 mg/l			02/28/23 19:22	1	

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## **Client Sample Results**

Client: AECOM Job ID: 580-123908-2

Project/Site: Red Hill - AFFF Assessment Sampling

Client Sample ID: AF-RHMW06-WGN01LF-2302W3 Lab Sample ID: 580-123908-7

Date Collected: 02/20/23 11:45 **Matrix: Water** 

Date Received: 02/22/23 10:30

Method: SW846 8015C GLY	' - Glycols- Direct Injection	(GC/FID)			
Amalusta	Desuit Ouglifier	1.00	DI Unit	_ n	D

Analyte	Result Qualifier	LOQ	DL Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	30 UM	5.0	1 1 mg/l			02/28/23 20:09	1

### **QC Sample Results**

Client: AECOM Job ID: 580-123908-2

Project/Site: Red Hill - AFFF Assessment Sampling

Method: 8015C GLY - Glycols- Direct Injection (GC/FID)

Lab Sample ID: MB 680-765364/10 **Client Sample ID: Method Blank Prep Type: Total/NA** 

**Matrix: Water** 

Analysis Batch: 765364

	MB	MB							
Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	1.1	mg/L			02/28/23 16:37	1

Lab Sample ID: LCS 680-765364/6 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 765364

	Spike	LCS	LCS			%Rec	
Analyte	Added	Result	Qualifier Ur	it C	O %Rec	Limits	
2-(2-Butoxyethoxy)ethanol	20.0	22.7	mg	ı/L	114	50 - 150	

Lab Sample ID: LCSD 680-765364/7 **Client Sample ID: Lab Control Sample Dup Matrix: Water** Prep Type: Total/NA

Analysis Batch: 765364

Alialysis Datcii. 100004									
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2-(2-Butoxyethoxy)ethanol	20.0	20.0		mg/L		100	50 - 150	13	50

3/1/2023

#### **Lab Chronicle**

Client: AECOM Job ID: 580-123908-2

Project/Site: Red Hill - AFFF Assessment Sampling

Client Sample ID: AF-RHMW04-WGN01LF-2302W3

Lab Sample ID: 580-123908-5

Date Collected: 02/20/23 10:10

**Matrix: Water** Date Received: 02/22/23 10:30

Batch Batch Dilution Batch Prepared Method Number Analyst or Analyzed **Prep Type** Type Run **Factor** Lab 02/28/23 19:22 Total/NA Analysis 8015C GLY 765364 GEM **EET SAV** 

Client Sample ID: AF-RHMW06-WGN01LF-2302W3 Lab Sample ID: 580-123908-7

Date Collected: 02/20/23 11:45 **Matrix: Water** 

Date Received: 02/22/23 10:30

Batch Batch **Dilution** Batch Prepared **Prep Type** Type Method Run Factor Number Analyst Lab or Analyzed Total/NA Analysis 8015C GLY 765364 GEM EET SAV 02/28/23 20:09

**Laboratory References:** 

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

**Eurofins Seattle** 

## **Accreditation/Certification Summary**

Client: AECOM Job ID: 580-123908-2

Project/Site: Red Hill - AFFF Assessment Sampling

### **Laboratory: Eurofins Savannah**

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

ANAB		Program Dept. of Defense ELAP	Identification Number	Expiration Date 09-22-24
The following analyte the agency does not	•	port, but the laboratory is not	certified by the governing authority.	This list may include analytes for wh
Analysis Method	Prep Method	Matrix	Analyte	

Eurofins Seattle

3/1/2023

## **Sample Summary**

Client: AECOM Job ID: 580-123908-2

Project/Site: Red Hill - AFFF Assessment Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-123908-5	AF-RHMW04-WGN01LF-2302W3	Water	02/20/23 10:10	02/22/23 10:30
580-123908-7	AF-RHMW06-WGN01LF-2302W3	Water	02/20/23 11:45	02/22/23 10:30

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### **Eurofins FGS, Seattle**

5755 8th Street East Tacoma, WA 98424

## **Chain of Custody Record**

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Client Information	Sempler: MIRANDA DEGARMO Elaino						Valker							rackin	g No(s	):			COC No: 2302W3AFEA08			
Client Information Client Contact:	(Phone:					rounte	, miles and							Origin:			—		Page;			
<u> </u>						e.Wal	Walker@EurofinsET.com												Page 1 of 1			
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Email: Watson Tanji (watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)	WO #:						ğ					d'	$\mathcal{X}$	1					- Ica - Di Water	U - Acetone V - MCAA		
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#### **Eurofins FGS, Seattle**

5755 8th Street East Tacoma, WA 98424

### **Chain of Custody Record**

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Client Information	Sempler.  MIRANDA DEGARMO Elaine														0(s):			COC No: 2302W3AFEA0			
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1001 Bishop St. Suite 1600	see subcontract TAT Requested (days):																	A-HCL	M - Hexane		
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State, Zlp: Hawaii 96813	Compliance Project: A Yes A No													Ų	1		Š	E - NaHSO4	P - Na204S Q - Na2S03		
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### **Login Sample Receipt Checklist**

Client: AECOM Job Number: 580-123908-2

Login Number: 123908 List Source: Eurofins Savannah List Number: 2 List Creation: 02/28/23 11:41 AM

Creator: Meincke, Griffin E

Comment Answer Question

Radioactivity wasn't checked or is </= background as measured by a survey

meter.

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or

tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate

HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs

Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").

Multiphasic samples are not present.

Samples do not require splitting or compositing.

Residual Chlorine Checked.